



2017 NEEDS ASSESSMENT

WV INFRASTRUCTURE AND JOBS DEVELOPMENT COUNCIL

DECEMBER 2017

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INTRODUCTION

The West Virginia Infrastructure and Jobs Development Council was established in 1994 under the West Virginia Infrastructure and Jobs Development Act, Chapter 31-15A of the West Virginia Code. The Council is a governmental instrumentality of the State. Its primary role is to evaluate requests from project sponsors seeking to plan, acquire, design, and construct water, sewer, and economic development projects within the State and to approve funding for those projects.

This assessment was conducted pursuant to the requirements contained in Chapter 31-15A-6(b) of the WV Code:

- 1) The Council is required to develop a comprehensive Statewide inventory of water supply systems and sewage treatment systems and an assessment of current and future needs;
- 2) The assessment identifies the areas of the State which do not have adequate public water or sewage systems;
- 3) Offers recommendations for the construction of new facilities or the extension or expansion of existing facilities to meet the identified needs;
- 4) It includes an identification of the obstacles, issues and problems which prevent or inhibit development of adequate infrastructure throughout the State, including financial, governmental, physical, or geographical factors and make recommendations that the Council considers appropriate regarding the obstacles, issues or problems identified; and
- 5) The comprehensive inventory and assessment shall be updated at least once in every three-year period beginning in 1996.

In 2011 the Council, in conjunction with the West Virginia Water Development Authority, implemented a statewide Geographic Information System (GIS) to achieve the following goals related to water and sewer infrastructure:

- Establish a database for existing water and sewer facilities, general locations, and service areas;
- Provide a means to continually update the database as new facilities are proposed and constructed;
- Provide an electronic tracking mechanism for funding applications and project status; and
- Provide the Council with situational awareness to support its decision-making process.

This assessment relies heavily on the data acquired from the GIS system in its inventory of existing water and sewer systems.

Data relied upon in this report is current as of December 31, 2017.

EXECUTIVE SUMMARY

Use of the GIS database

In conjunction with its GIS implementation, the Council collected location data on all known existing public (government and privately owned) water and sewer systems within the State. This data includes the location of treatment facilities, as well as the general locations of water distribution and sewer collection lines. The water distribution and sewer collection lines data is available to the public via the Council's website at www.wvinfrastructure.com. Although the GIS data provides the State with the most accurate information obtained to-date, the following limitations must be noted for purposes of this assessment:

- 1) The GIS relies on the location of known structures (addressable structures which are updated periodically, at least every three years) to approximate the served and unserved population. Therefore, the accuracy may be impacted by structures that are uninhabited, removed or built between updates;
- 2) In establishing the locations of existing water and sewer lines, the GIS relies on records obtained from utilities who own and/or operate those facilities. In some areas, data gaps remain because of missing, unreliable, or unavailable utility records;
- 3) The data provides the location of existing water and sewer lines generally. It does not provide a resolution of detail required to conduct design analysis, i.e., locate manholes, valves, pump stations, pipe sizes, storage tanks, or hydraulic information;
- 4) The Council updates the existing inventory database whenever a project application is filed by requiring Project Sponsors to provide preliminary maps of the project, and the public IJDC website portal is updated to show the project location (blue spigot for water and red outfall for sewer). By clicking on the project, the public can find out the project description, estimated cost, funding scenario, number of new customers served, and project team members by company name and telephone number. However, not all water and sewer projects are required to be filed with the Council and therefore many projects may not be added to the database during the Council's application approval process. The Council is working with others to obtain this GIS information for water and sewer systems in order to be able to provide a more complete database.

Served and Unserved Areas

Public water systems - approximately 62% of the State's structures are served by a public water system. The number of customers served by public water utilities in West Virginia is approximately 652,228.

Public sewer systems – approximately 46% of the State's structures are served by a public sewer system. The number of customers served by public sewer utilities in West Virginia is approximately 449,449.

The unserved areas within the State vary considerably between Counties. Appendix F provides a summary of served and unserved structures within the State, while GIS data is provided graphically in Appendix G.

Current/Future Needs

Current funding needs for water and sewer infrastructure based on applications filed with, and approved by, the Council are approximately \$296M for water projects and \$395M for sewer projects. In addition, based on the list of Long-Term Control Plans (LTCPs) filed with WVDEP as of 12/31/17, the requirement to satisfy the State's Combined Sewer Overflows (CSOs) need exceeds \$1.6 Billion. Since many of the LTCPs involve construction of sanitary sewers which qualify for Council funding, and the combined sewers then become stormwater sewers, the estimate is over \$1.0 Billion to satisfy CSOs need.

Projected future needs assume a goal of serving every customer in the State. Based on assumptions made, the cost of providing water service to every remaining unserved household in the State is approximately \$2.3 Billion. For sewer service, the estimate is approximately \$10.7 Billion. If rehabilitation work is considered in the estimate, the need may be approaching approximately \$17 Billion.

EXISTING SYSTEM INVENTORIES

Public Water Utilities

A list of existing water systems and the customers served by each are provided in Appendix A. In total, there are 326 public water utilities operating in the State serving approximately 652,228 customers.

In terms of structures, the number of structures within the State that have water service available is approximately 610,742.

Public Sewer Utilities

A list of existing sewer systems and the customers served by each are provided in Appendix B. In total, there are 293 public sewer utilities operating in the State serving approximately 449,449 customers.

The number of structures within the State that have sewer service available is approximately 450,748.

The following table provides a summary of existing systems (utilities) throughout the State:

	WATER	SEWER
Existing utilities ¹	326	293
Customers served ¹	652,228	449,449
Served structures	610,742	450,748
Unserved structures	366,142	526,136
Percent structures served	62%	46%

Also provided in Appendix F is a listing of served and unserved structures in the State, organized by the following geographical and political boundaries:

- x County
- x Congressional Districts
- x Regional Planning and Development Council Areas
- x Senatorial Districts
- x House Districts

ASSESSMENT OF CURRENT NEEDS

Public Water Systems

Current applications

A list of water project applications received as of 12/31/17 is provided in Appendix C. This includes all preliminary applications approved by the Council as technically feasible, but without committed funding as of 12/31/17. The total estimated costs of these projects exceed \$302M, where approximately \$6M has been committed from other funding sources. The total estimate of current needs for water systems; therefore, is approximately \$296M.

Public Sewer Systems

Current applications

A list of sewer project applications approved as of 12/31/17 is provided in Appendix D. This includes all preliminary applications approved by the Council as technically feasible, but without committed funding as of 12/31/17. The total estimated cost of these projects exceed \$398M, where approximately \$3M has been committed from other funding sources. The total estimate of current needs for sewer projects; therefore, is approximately \$395M.

Combined Sewer Overflow Communities

Combined Sewer Overflows (CSOs)²

Based on the list of Long-Term Control Plans filed with WVDEP as of 12/31/17, the requirement to satisfy CSOs need exceeds \$1.0 Billion. Although the LTCPs currently estimate the cost to meet State requirements at \$1.6 Billion, only sanitary sewers qualify for Council funding. Since stormwater sewers do not qualify for Council funding, a portion of the improvements needed will not involve the construction of sanitary sewers and the combined sewers becoming stormwater sewers. Therefore, since many of the LTCPs involve the construction of sanitary sewers and the combined sewers becoming stormwater sewers, the estimate is over \$1.0 Billion to satisfy CSOs need. Below is a list of CSO communities and their estimated total needs for compliance. Communities listed without an estimate did not have an approved LTCP filed with the DEP or did not have a cost listed in their LTCP.

<u>UTILITY</u>	<u>ESTIMATED NEED (\$)</u>
Barrackville	5,743,960
Beckley	10,000,000
Belington	6,551,377
Benwood	6,756,200
Bethany	-
Boone Co PSD	1,500,000
Bridgeport	6,900,000
Buckhannon	3,786,876
Cameron	1,887,400
Cedar Grove	6,000,000
Charleston	256,318,000
Clarksburg	55,020,000
Davis	-
Dunbar	35,000,000
Elkins	23,252,000
Fairmont	-
Farmington	3,287,500
Fayetteville	-
Flatwoods-Canoe Run	33,000,000
Follansbee	6,306,915
Grafton	4,500,000
Greater Paw Paw PSD	11,493,800
Hinton	7,513,250
Huntington	584,617,186
Kenova	1,710,948
Keyser	9,882,000
Kingwood	13,000,000
Logan	77,000,000
Marlinton	2,100,000
Marmet	1,812,594
Martinsburg	-
McMechen	3,379,000
Monongah	6,356,007
Montgomery	2,068,000
Moorefield	-
Morgantown	172,990,000
Moundsville	9,770,400
Mullens	465,000
New Martinsville	58,223,836
Nutter Fort	-
Nitro	16,592,538
Parsons	1,275,000

Philippi	14,920,800
Piedmont	-
Point Pleasant	5,000,000
Princeton	6,500,000
Richwood	8,691,000
St. Albans	107,726
Shinnston	2,139,775
Sistersville	11,952,000
Smithers	1,400,000
Thomas	4,799,950
Wayne	740,000
Welch	22,691,961
Wellsburg	8,399,400
West Union	2,865,700
Weston	3,634,531
Westover	1,940,000
Wheeling	<u>80,000,000</u>
 TOTAL ESTIMATED COST	 \$1,621,842,630

Summary of Current Needs

Current funding needs for water and sewer infrastructure based on applications filed with, and approved by the Council, are approximately \$296M for water projects and \$395M for sewer projects. In addition, based on the list of Long-Term Control Plans filed with WVDEP as of 12/31/17, the requirement to satisfy the State's Combined Sewer Overflows (CSOs) need exceeds \$1.0 Billion.

FUTURE NEEDS

Definition

For purposes of this assessment, “future needs” are an estimate of the costs needed to serve the remaining unserved households/prospective customers of the State.

Methodology

In the absence of large preliminary studies with an enormous scope of work, placing a dollar cost on future needs is highly speculative and requires several assumptions, mainly relating to the following:

- x Average cost of serving each household/prospective customer
- x The number of unserved households/prospective customers
- x The manner in which each household/prospective customer would be served

The average cost of serving each household/prospective customer assumes that the remaining unserved households/prospective customers would be provided service through a typical line extension. It does not necessarily take into account the addition of treatment or storage requirements on a per customer basis, which differs greatly for each locale and therefore is not easily estimated on such a broad scale. It also does not take into account alternate methods for providing service, such as decentralized systems.

For water service, a cost per customer of \$26,250 is assumed (\$25,000 assumed in 2013 x CPI³).
For sewer service, a cost per customer of \$36,750 is assumed (\$35,000 assumed in 2013 x CPI³).

Finally, the number of unserved households/prospective customers must be estimated. This assessment uses the difference between the number of households based on US Census data, and the number of customers served based on statistical data filed with the PSC. It should also be noted that a strict count of utility customers will also include non-residential entities, such as businesses, industries, etc. and this must be considered when attempting to estimate the number of unserved households/prospective customers.

Since a significant portion of current applications are for rehabilitation or contain rehabilitation work, it can be assumed that future needs may be understated by as much as \$4 Billion. Therefore, if rehabilitation work is considered in the estimate, the need may be approaching approximately \$17 Billion (\$2.3 Billion plus \$10.7 Billion from table below plus 4 Billion).

COST TO SERVE EVERY HOUSEHOLD/PROSPECTIVE CUSTOMER

	WATER	SEWER
Number of Households ⁴	740,890	740,890
Customers served ¹	652,228	449,449
Difference (unserved)	88,662	291,441
Avg. cost per customer to serve	\$26,250	\$36,750
Overall need	\$2.3 Billion	\$10.7 Billion

OBSTACLES, ISSUES AND PROBLEMS

FINANCIAL CONCERNS

Available Funding Levels

The current status of funding sources is summarized below:

- The EPA State Revolving Fund (SRF) programs are largely driven by Congressional budgeting and funding for both the Clean Water State Revolving Fund (CWSRF) and Drinking Water Treatment Revolving Fund (DWTRF), and funding for these programs has been relatively stable the last few years. However, there is no guarantee that will continue. In addition to the federally allocated funds and the state match provided by the IJDC, both programs receive payments of principal and interest that are used to fund projects. The CWSRF receives approximately \$33 million annually from this funding stream. The DWSRF program receives \$15 Million annually for projects from repayments.
- The Community Development Block Grant (CDBG) program was allocated \$12,288,766 for FY2017. FY2018 funding is unknown at the present time and will remain unknown until Congress passes an appropriations bill or a revised budget.
- The Appalachian Regional Commission (ARC) is estimating approximately \$5 Million will be available for FY2018 grant awards as a “best-case” scenario.
- The Abandoned Mines Lands and Reclamation (WVDEP-AML) Waterlines Program budget for Calendar Year 2018 is estimated to be approximately \$19 Million available for waterline construction. The \$19 Million budgeted amount includes unspent AML Waterlines grant funds carried over from previous grant years. AML anticipates that in future years, unspent waterlines grant funds will not be carried forward, but will instead be redirected to AML Reclamation projects. Current Federal legislation mandates that the coal tax and resultant federal funds will end in 2021, and additional AML Waterlines Program funds may not be available after that time.
- The US Department of Agriculture – Rural Utility Services (USDA-RUS) anticipates having the same allocation for FY2018 as in FY2017, which was approximately \$17,260,000 for loans and \$5,528,000 for grants.
- WV Infrastructure & Jobs Development Council (Council) - During the 2017 Legislative Session, the Enrolled Senate Bill 1013 passed on June 16, 2017 which restored the cuts to the Infrastructure Fund from excess lottery revenues to a maximum of \$40 Million which will be utilized in fiscal year 2019. This restoration of the cuts from the previous year which was a deposit of \$20 Million collected during fiscal year 2017 and used to fund projects in fiscal year 2018.

Availability of Grant Funds

The most sought-after form of funding for water and sewer infrastructure projects is grants. This is also the least available of fund types, due mainly to the fact that the largest funding programs were established as revolving funds and therefore rely on loan repayments to replenish and sustain themselves. The amount of grant funding available actually serves to make many projects viable and hence proceed to construction. A review of the Infrastructure Fund’s project financing closings between FY2015 and FY2017 reflects that approximately 79% of those projects had Council grants in their funding

packages. Had those grants not been available it is quite possible that most of the projects funded through the Infrastructure Fund over the last three years would not have proceeded to construction, or would have proceeded with reduced project scopes.

User Rates

Water and sewer user rates continue to rise in order to meet current utility expense increases and evolving regulatory requirements. Accordingly, the income available for utilities to service the debt associated with borrowing public funds is less. Every utility undertaking a capital project must determine the maximum user rates it is willing to accept in order to construct a project. Although this amount is different for each utility (and project), it will be capped as a direct function of the rates its customers are willing to pay and/or what the management of the utility is willing to accept. As rates approach these “unacceptable” levels, project sponsors (utilities) may be less willing to take on additional debt (loans) and may only undertake capital projects if grant funds are available. Another probable outcome is that, in the absence of grant funds, utilities will undertake only those projects with a high urgency, such as those designed to ensure compliance with regulatory standards and consent decrees versus projects that are not being mandated by law or regulation, such as extensions of service to unserved areas.

PHYSICAL AND GEOGRAPHIC CONCERNS

West Virginia’s geography and geology mandate relatively higher costs for underground infrastructure, such as water and sewer projects. This impact exists not only for new construction, but for replacement and rehabilitation projects as well. Real estate to construct new treatment facilities can be difficult and expensive to acquire, which sometimes creates added controversy over plant and pump/lift station siting proposals.

Typically, existing systems will expand service to more accessible areas first. As time progresses, the remaining unserved areas will be located in more remote, rugged, and less densely populated areas. This results in higher costs, both on a per-customer and per-mile basis.

RECOMMENDATIONS

- 1) The need for infrastructure investments and improvements far outweighs the funds available.
Determining which projects receive funding commitments must be based on objective, uniform criteria; among the most important of these criteria is a project's readiness to proceed to construction after receiving its funding commitments. This incentivizes project Sponsors to maintain timely project schedules;
- 2) Ensure that the "utilization rates" of the State's existing available funds are as close to 100% as possible, where "utilization" is defined as a formal, binding commitment of funds. Once the available funds are 100% utilized, then planning for additional procurement of funding, i.e., bond issues, leveraging, etc. should be considered;
- 3) Funding agencies must continue to coordinate their efforts in order to maximize the effectiveness of the State's limited funds available;
- 4) Continue to provide matches for both EPA-SRF funds administered by the State (CWSRF and DWTRF); and
- 5) Ensure that all federal funds are utilized and matched when necessary by State funds. Other than the Infrastructure Fund, all other primary funding agencies for water and sewer projects in the State receive their funds primarily from federal sources. Therefore, almost every funding agency in the State partnering with the Infrastructure Fund can be considered as requiring a "federal match" in order to ensure its projects are fully funded.

REFERENCES

- 1) 2016 Statistical Report, Public Service Commission of West Virginia
- 2) Combined Sewer Overflow (CSO) Long Term Control Plans, WV Department of Environmental Protection
- 3) Consumer Price Index (CPI) for 2015 - 2017 from the US Bureau of Labor Statistics
- 4) US Census Data for 2010 updated from American Community Survey for 2015

Appendix A

Existing Water Systems and Customers - Private Water Utilities

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
Alpine Lake Public Utilities Company	517
Beckley Water Company	22,551
Bellwood Community Facilities Imp. Corp.	43
Cave Road Utilities, LLC	-
Cheat Mountain Water Company, Inc.	606
Fox Glen Utilities, Inc.	253
Hampton Roads Water System	-
Jefferson Utilities, Inc.	2,585
Lakewood Utilities, Inc.	172
Mountain View Water System LLC	54
Newell Company, Inc., The	651
Otsego Community Water System	28
P & P Enterprises Utilities, LLC	2
Springer Run Park, LLC	-
Sunny View Acres Water Project	28
Timberline Four Seasons Utilities, Inc.	428
Valley Water & Sewer Services, Inc.	121
West Logan Water Company	417
West Virginia Resorts LLC	53
West Virginia-American Water Co.	167,366
Total	<u>195,875</u>
 TOTAL SERVED BY WATER IN STATE	 652,228

Source: 2016 Statistical Report, Public Service Commission of WV

Appendix A

Existing Water Systems and Customers - Municipal Water Utilities

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
Albright	151
Alderson	711
Anmoore	476
Athens	1,777
Beech Bottom	216
Belington	942
Belmont	440
Benwood	592
Berkeley Springs (Bath)	1,369
Bethlehem	1,142
Beverly	1,072
Bradshaw	71
Bridgeport	4,723
Bruceton	82
Buckhannon	4,003
Burnsville	383
Cairo	163
Camden-on-Gauley	170
Cameron	402
Capon Bridge	323
Carpendale	373
Cedar Grove	438
Ceredo	626
Chapmanville	922
Charles Town	5,951
Chester	1,789
Clarksburg	8,242
Clay	562
Davis	438
Davy	189
Delbarton	142
East Bank	399
Elizabeth	858
Elkins	4,021
Fairmont	13,784
Fairview	477
Falling Springs (Renick)	101
Farmington	208
Follansbee	3,624
Fort Gay	631
Franklin	713
Gary	479

Appendix A

Existing Water Systems and Customers - Municipal Water Utilities

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
Gilbert	743
Glasgow	355
Glen Dale	1,108
Glenville	872
Grafton	2,657
Grant Town	-
Grantsville	308
Harman	95
Harpers Ferry	812
Harrisville	1,137
Hartford	272
Hillsboro	105
Hurricane	3,574
Huttonsville	77
Junior	382
Kenova	3,838
Kermit	533
Keyser	2,399
Keystone	80
Kingwood	1,425
Lester	266
Lewisburg	4,892
Logan	1,991
Lumberport	684
Man	446
Mannington	935
Marlinton	740
Martinsburg	6,504
Mason	762
Masontown	921
Matewan	897
Matoaka	125
McMechen	839
Meadow Bridge	253
Middlebourne	516
Mill Creek	389
Milton	2,519
Monongah	1,413
Moorefield	1,182
Morgantown	25,748
Moundsville	4,499
Mount Hope	677
New Cumberland	591

Appendix A

Existing Water Systems and Customers - Municipal Water Utilities

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
New Haven	682
New Martinsville	2,701
Newburg	430
Northfork	163
Nutter Fort	835
Oceana	1,204
Paden City	1,263
Parkersburg	16,053
Parsons	781
Paw Paw	231
Pax	-
Pennsboro	626
Petersburg	1,259
Philippi	1,596
Piedmont	289
Pine Grove	-
Pineville	1,145
Pocahontas	450
Point Pleasant	2,436
Rainelle	908
Ravenswood	1,886
Reedy	179
Rhodell	-
Richwood	1,066
Ridgeley	317
Ripley	2,456
Rivesville	685
Romney	884
Ronceverte	1,038
Rowlesburg	240
Rupert	489
Salem	799
Shepherdstown	1,684
Shinnston	2,306
Sistersville	952
Spencer	2,150
St. Albans	6,133
St. Marys	1,094
Star City	931
Stonewood	934
Summersville	2,699
Terra Alta	774

Appendix A

Existing Water Systems and Customers - Municipal Water Utilities

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
Thomas	354
Triadelphia	517
Tunnelton	418
Union	387
Valley Grove	317
Vienna	5,480
War	-
Wardensville	367
Wayne	2,393
Weirton	9,440
Welch	1,118
Wellsburg	1,612
West Hamlin	995
West Milford	271
West Union	716
Wheeling	13,304
White Sulphur Springs	1,877
Williamson	1,678
Williamstown	1,529
Womelsdorff	109
Worthington	460
Totals	<hr/> 248,826

Appendix A

Existing Water Systems and Customers - Public Service Districts (Water)

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
Adrian Public Service District	1,946
Armstrong Public Service District	800
Berkeley County Public Service District	22,346
Big Bend Public Service District	-
Bingamon Public Service District	545
Birch River Public Service District	441
Bluewell Public Service District	2,998
Boone County Public Service District	-
Boone-Raleigh Public Service District	-
Branchland-Midkiff Public Service District	1,176
Brenton Public Service District	-
Brooke County Public Service District	114
Buffalo Creek Public Service District	1,121
Central Barbour Public Service District	1,057
Central Boaz Public Service District	651
Central Hampshire Public Service District	1,628
Century Volga Public Service District	1,021
Cheat View Public Service District	3,669
Chestnut Ridge Public Service District	1,152
Clay Battelle Public Service District	1,644
Clay County Public Service District	654
Clay-Roane Public Service District	850
Claywood Park Public Service District	3,782
Clover Public Service District	419
Cool Ridge-Flat Top Public Service District	1,796
Coon's Run Public Service District	417
Cottageville Public Service District	1,338
Cowen Public Service District	1,308
Craigsville Public Service District	1,930
Crum Public Service District	1,269
Cumberland P.S.D. c/o WV-American Water	97
Danese Public Service District	936
Downs Public Service District	442
East View Public Service District	228
Eastern Wyoming Public Service District	1,381
Elkins Road Public Service District	1,096
Ellenboro-Lamberton Public Service District	251
Enlarged Hepzibah Public Service District	843
Fenwick Mountain Public Service District	210
Flatwoods-Canoe Run Public Service District	1,860
Fountain Public Service District	435
Frankfort Public Service District	2,750

Source: 2016 Statistical Report, Public Service Commission of WV

Appendix A

Existing Water Systems and Customers - Public Service Districts (Water)

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
Friendly Public Service District (Tyler County)	949
Gap Mills Public Service District	191
Gauley River Public Service District	1,359
Gilmer County Public Service District	-
Glen Dale Heights Public Service District	228
Glen Rogers Public Service District	95
Glen White-Trap Hill Public Service District	1989
Grandview-Doolin Public Service District	1032
Grant County Public Service District	2,713
Grant Public Service District	903
Greater Harrison County Public Service District	3,450
Green Valley-Glenwood Public Service District	4,364
Greenbrier County Public Service District No. 2	469
Hammond Public Service District	916
Hamrick Public Service District	729
Hardy County Public Service District	1,985
Hodgesville Public Service District	1,203
Hundred-Littleton Public Service District	274
Huttonsville Public Service District	1,238
Ice's Run Route 250 Public Service District	473
Jane Lew Public Service District Water Division	649
Jefferson County Public Service District	113
Jumping Branch-Nimitz Public Service District	-
Justice Public Service District	227
Kanawha Falls Public Service District	985
Kopperston Public Service District	-
Lashmeet Public Service District	-
Lavalette Public Service District	3,807
Leadsville Public Service District	643
Lincoln Public Service District	2,210
Little Creek Public Service District	902
Logan County Public Service District	10,042
Lubeck Public Service District	4,536
Mannington Public Service District	556
Marianna Public Service District	11
Marshall County Public Service District No. 1	1,311
Marshall County Public Service District No. 2	655
Marshall County Public Service District No. 3	1,170
Marshall County Public Service District No. 4	1,706
Mason County Public Service District	5,976
McDowell County Public Service District	3,064
Midland Public Service District	1,434
Mineral Wells Public Service District	2,547

Source: 2016 Statistical Report, Public Service Commission of WV

Appendix A

Existing Water Systems and Customers - Public Service Districts (Water)

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
Mingo County Public Service District	4,119
Monumental Public Service District	868
Mountain Top Public Service District	887
Mt. Zion Public Service District	516
Nettie-Leivasy Public Service District	1,375
New Haven Public Service District	-
Northern Jackson County Public Service District	1081
Norton-Harding-Jimtown Public Service District	689
Oakland Public Service District	935
Oakvale Road Public Service District	-
Ohio County Public Service District	4,243
Page-Kincaid Public Service District	650
Paw Paw Rt 19 Public Service District	538
Pendleton County Public Service District	742
Pleasant Hill Public Service District	669
Pleasant Valley Public Service District	947
Pleasants County Public Service District	229
Pocahontas County Public Service District	272
Preston County Public Service District No. 1	1,461
Preston County Public Service District No. 2	1,405
Preston County Public Service District No. 4	1459
Putnam Public Service District	9,589
Queen Shoals Public Service District	-
Raleigh County Public Service District	4,653
Ravencliff-McGraws-Saulsville Public Service Dist	1,269
Red Sulphur Public Service District	2,207
River Road Public Service District	781
Salt Rock Public Service District	-
Short Line Public Service District	1,169
Southern Jackson County Public Service District	2,441
Southwestern Water District	2,040
Sugar Creek Public Service District	585
Summit Park Public Service District	424
Sun Valley Public Service District	1,217
Taylor County Public Service District	1,081
Tomlinson Public Service District	923
Union-Williams Public Service District	3,212
Valley Falls Public Service District	1,659
Walton Public Service District	826
Washington Pike Public Service District	1,382
Wetzel County Public Service District No. 1	709
Wilderness Public Service District	2,038
Totals	<hr/> 194,995

Source: 2016 Statistical Report, Public Service Commission of WV

Appendix A

Existing Water Systems and Customers - Water Associations and Authorities

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
Arthurdale Water Association	109
Clinton Water Association, Inc.	3,602
Coal Mountain Water Company	41
Coolfont Mountainside Association, Inc.	120
Crumpler Community Water Association, Inc.	85
Denver Water Association	142
Gallipolis Ferry Water Association, Inc.	433
Garwood Water Maintenance Association	-
Green Camp Community Water Association	19
Hardy County Rural Development Authority	80
Herndon Water Works	-
Hiawatha Water Association	-
Hughes River Water Board	3
Hutchinson Community Water Association	151
J-2-Y-35 Water Association, Inc.	513
Lincoln Heights Improvement Association	85
Little Laurel Run Improvement Association	35
Ministers Run Water Association	147
Montana Water Association	301
Mount Hope Water Association	1,202
Mountain View Water Association	873
New Creek Water Association, Inc.	1,374
O'Toole Water Association, Inc.	-
Pleasants County Development Authority	-
Route 16 Water Corporation	584
Sugar Lane Water Association Inc	79
Tri-County Water Association	1,087
Webster County Economic Development Authority	208
Whitmer Water Association, Inc.	-
Windmill Gap Water Association	-
Woods Homeowners Association, Inc., The	1,259
Total	<u>12,532</u>

Appendix B

Existing Sewer Systems and Customers - Private Sewer Utilities

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
Alpine Lake Public Utilities Company	516
Big Bend Sewer Association, Inc.	-
Butcher Bend Lagoon Maintenance Association	19
Carney Park Landowners/Homeowners Association	59
C & J Utilities, LLC	32
Cacapon South Utility Association, Inc.	84
Cave Road Utilities, LLC	-
Chestnut Point Property Owners Association, Inc.	75
Circle Drive Estates Association	41
Coolfont Mountainside Association Inc.	120
Eastwood Systems, Inc.	-
Fountainhead Homeowners Association	-
Graham Meadows Service District, Inc.	55
Green Acres Utilities	109
Hidden Valley Treatment, Inc.	84
Holiday Park Leisure Acres Association, Inc.	-
HPSD, LLC	211
Hubbard Heights Subdivision H.O. Association	-
Lakewood Utilities, Inc.	172
Linmont Sanitation System, Inc.	81
Little Kanawha Service Company	58
Moorefield/Hardy County Wastewater Authority	3
Mountaineer Village	-
Newell Company, Inc., The	449
Ogden Sewer Company	82
P & P Enterprises Utilities LLC	36
Sewage Systems, Inc.	-
Shenandoah Junction Public Sewer, Inc.	166
Spring Valley Home Owners Association, Inc.	-
Springer Run Park, LLC	-
Timberline Four Seasons Utilities, Inc.	743
Vitech Enterprises, Inc.	-
Wastewater Management, Inc.	50
West Virginia Resorts, LLC	54
West Virginia-American Water Company	1,056
Williamsburg Sewer System, Inc.	209
Wood County Parks and Recreation Commission	17
Total	<u>4,581</u>

Appendix B

Existing Sewer Systems and Customers - Municipal Sewer Utilities

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
Albright	101
Alderson	523
Anmoore	408
Ansted	607
Athens	451
Barboursville	1,886
Barrackville	655
Beckley	7,416
Belington	825
Belle	579
Belmont	402
Benwood	565
Bethany	216
Bethlehem	1,111
Beverly	807
Blacksville	103
Bluefield	7,775
Bradshaw	129
Bridgeport	4,692
Buckhannon	3,104
Buffalo	502
Burnsville	214
Cairo	155
Camden-on-Gauley	103
Cameron	396
Capon Bridge	323
Carpendale	371
Cedar Grove	381
Ceredo	777
Chapmanville	815
Charles Town	3,244
Charleston	23,008
Chesapeake	649
Chester	1,692
Clarksburg	7,492
Clay	303
Clearview	253
Davis	429
Delbarton	429
Dunbar	3,453
Durbin	168
East Bank	403

Appendix B

Existing Sewer Systems and Customers - Municipal Sewer Utilities

	AVG. #
<u>NAME OF UTILITY</u>	<u>CUSTOMERS</u>
Eleanor	969
Elizabeth	432
Elkins	3,063
Fairmont	9,694
Farmington	252
Flemington	269
Follansbee	2,421
Fort Gay	313
Franklin	457
Gary	422
Gilbert	302
Glasgow	332
Glen Dale	1,108
Glenville	738
Grafton	2,380
Grantsville	329
Granville	340
Handley	111
Harman	78
Harrisville	822
Hartford	198
Hillsboro	160
Hinton	1,246
Huntington	19,103
Hurricane	1,964
Junior	196
Kenova	1,327
Kermit	138
Keyser	2,278
Kingwood	1,596
Leon	117
Logan	850
Lumberport	598
Man	387
Mannington	937
Marlinton	591
Marmet	647
Martinsburg	5,997
Mason	473
Masontown	515
Matewan	836
Matoaka	125
McMechen	823

Appendix B

Existing Sewer Systems and Customers - Municipal Sewer Utilities

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
Meadow Bridge	335
Middlebourne	555
Milton	1,895
Monongah	573
Montgomery	677
Moorefield	1,351
Morgantown	22,124
Moundsville	4,439
Mount Hope	523
Mullens	-
New Cumberland	455
New Haven	675
New Martinsville	2,578
Newburg	152
Nitro	4,459
North Hills	314
Nutter Fort	835
Oak Hill	3,303
Oceana	1,582
Paden City	1,200
Parkersburg	15,396
Parsons	694
Paw Paw	231
Pax	159
Pennsboro	544
Petersburg	1,261
Philippi	1,258
Piedmont	289
Pine Grove	-
Poca	682
Point Pleasant	2,108
Pratt	226
Princeton	4,025
Ranson	1,705
Ravenswood	1,810
Reedsville	321
Reedy	98
Richwood	878
Ridgeley	316
Ripley	2,259
Romney	1042
Ronceverte	805
Rowlesburg	232

Appendix B

Existing Sewer Systems and Customers - Municipal Sewer Utilities

	AVG. #
<u>NAME OF UTILITY</u>	<u>CUSTOMERS</u>
Salem	742
Sand Fork	58
Shepherdstown	1,105
Shinnston	1,039
Sistersville	952
Smithers	380
Sophia	832
South Charleston	7,080
Spencer	1,559
St. Albans	6,147
St. Marys	913
Star City	915
Stonewood	922
Summersville	1,662
Terra Alta	657
Thomas	304
Triadelphia	497
Tunnelton	131
Union	302
Vienna	5,472
War	458
Wardensville	351
Wayne	761
Weirton	9,282
Welch	867
Wellsburg	1,460
West Hamlin	396
West Union	556
Weston	2,707
Westover	2,249
Wheeling	12,578
White Sulphur Springs	1,680
Williamson	1,281
Williamstown	1,416
Winfield	1,110
Worthington	312
Total	<hr/> 297,346

Appendix B

Existing Sewer Systems and Customers - Public Service Districts (Sewer)

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
Arbuckle Public Service District	575
Armstrong Public Service District	784
Berkeley County Public Service Sewer District	21,928
Big Bend Public Service District	-
Bluewell Public Service District	1,258
Boone County Public Service District	1,833
Boone-Raleigh Public Service District	-
Bradley Public Service District	1,592
Bramwell Public Service District	200
Brooke County Public Service District	1029
Buffalo Creek Public Service District	1,248
Canaan Valley Public Service District	4
Center Public Service District	746
Central Boaz Public Service District	483
Central Hampshire Public Service District	766
Claywood Park Public Service District	1,700
Colfax Public Service District	137
Cottageville Public Service District	228
Cowen Public Service District	573
Crab Orchard-MacArthur Public Service District	4,192
Craigsville Public Service District	976
Culloden Public Service District	1,204
Deckers Creek Public Service District	1,866
East View Public Service District	349
Elk Valley Public Service District	4,684
Ellenboro-Lamberton Public Service District	166
Enlarged Hepzibah Public Service District	824
Flatwoods-Canoe Run Public Service District	1,286
Frankfort Public Service District	1,560
Glen Rogers Public Service District	97
Greater Harrison County Public Service District	2,164
Greater Marion Public Service District	423
Greater Paw Paw Sanitary District	1,360
Greater St. Albans Public Service District	2,104
Green Valley-Glenwood Public Service District	4,382
Greenbrier County Public Service District No. 2	2,398
Greenbrier Public Service District No. 1	2,717
Hamlin Public Service District	712
Hamrick Public Service District	458
Hancock County Public Service District	1,379
Harpers Ferry-Bolivar Public Service District	752
Hundred-Littleton Public Service District	205

Source: 2016 Statistical Report, Public Service Commission of WV

Appendix B

Existing Sewer Systems and Customers - Public Service Districts (Sewer)

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
Huttonsville Public Service District	945
Jane Lew Public Service District	898
Jefferson County Public Service District	2,565
Kanawha Falls Public Service District	1,064
Kanawha Public Service District fka Chelyan PSD	2,614
Kingmill Valley Public Service District	1,390
Lake Floyd Public Service District	153
Leadsville Public Service District	780
Logan County Public Service District	1,589
Lubeck Public Service District	2,362
Malden Public Service District	3,282
Marshall County Sewerage District	726
Mason County Public Service District	271
Meadow Creek Public Service District	-
Midland Public Service District	884
Mineral Wells Public Service District	1,785
Mingo County Public Service District	419
Mountain Top Public Service District	299
Mt. Zion Public Service District	132
New Creek Public Service District	1,062
North Beckley Public Service District	3,881
Northern Jackson County Public Service District	121
Northern Wayne County Public Service District	2,774
Norton-Harding-Jimtown Public Service District	689
Oakvale Road Public Service District	1,765
Ohio County Public Service District	2,043
Page-Kincaid Public Service District	405
Pea Ridge Public Service District	4,797
Pleasant View Public Service District	159
Pocahontas County Public Service District	596
Preston County Public Service District	244
Prichard Public Service District	196
Putnam Public Service District	10,668
Red Sulphur Public Service District	1,224
Salt Rock Public Service District	1,588
Shady Spring Public Service District	4,303
Sissonville Public Service District	1,637
Southern Jackson County Public Service District	770
Spring Valley Public Service District	508
Summit Park Public Service District	566
Sun Valley Public Service District	727
Tennerton Public Service District	885
Tyler County Public Service District (Friendly PSD)	290

Appendix B

Existing Sewer Systems and Customers - Public Service Districts (Sewer)

<u>NAME OF UTILITY</u>	<u>AVG. # CUSTOMERS</u>
Union Public Service District	5,315
Union Williams Public Service District	1,810
Warm Springs Public Service District	1,424
Webster Springs Public Service District	641
West Dunbar Public Service District	724
White Oak Public Service District	956
Whitehall Public Service District	1,254
Totals	<hr/> 147,522

Appendix E

Infrastructure Funding Agencies in West Virginia

WV Bureau for Public Health (WVBPH)

Programs: Drinking Water Treatment Revolving Fund (DWTRF)
Contact: Robert Decrease, 304-356-4301

WV Development Office (WVDO)

Programs: Appalachian Regional Commission Grant (ARC)
Small Cities Block Grant (SCBG)
Contact: Todd Goddard, 304-558-2234

WV Department of Environmental Protection (WVDEP)

Programs: Abandoned Mine Lands (AML)
Clean Water State Revolving Fund (CWSRF)
Contact: CWSRF - Kathy Emery, 304-926-0440
AML - Roger Earle, 304-926-0499

WV Infrastructure and Jobs Development Council (WVIJDC)

Contact: Wayne Morgan, 304-414-6501

US Department of Agriculture - Rural Utilities Service (USDA-RUS)

Contact: Janna Lowery, 304-284-4886

US Army Corps of Engineers (USACOE)

Programs: COE 571 and COE 340
Contact: Sharanna Romans, 304-399-5025

WV Water Development Authority (WVWDA)

Contact: Marie Prezioso, 304-414-6500

County	Water				Sewer			
	Unserved	Served	% no	% yes	Unserved	Served	% no	% yes
Barbour	2992	7220	29%	71%	7559	2653	74%	26%
Berkeley	7915	18192	30%	70%	13273	12834	51%	49%
Boone	1708	10590	14%	86%	9664	2634	79%	21%
Braxton	10994	5392	67%	33%	14290	2096	87%	13%
Brooke	9065	10912	45%	55%	7774	12203	39%	61%
Cabell	1373	19890	6%	94%	5766	15497	27%	73%
Calhoun	1635	1087	60%	40%	2212	510	81%	19%
Clay	4940	4828	51%	49%	9284	484	95%	5%
Doddridge	7373	1732	81%	19%	8396	709	92%	8%
Fayette	5118	18446	22%	78%	11213	12351	48%	52%
Gilmer	2661	1541	63%	37%	3550	652	84%	16%
Grant	3712	4169	47%	53%	6008	1873	76%	24%
Greenbrier	12874	9166	58%	42%	11327	10713	51%	49%
Hampshire	12398	3221	79%	21%	12883	2736	82%	18%
Hancock	4766	10471	31%	69%	2998	12239	20%	80%
Hardy	2638	2220	54%	46%	3869	989	80%	20%
Harrison	6446	31440	17%	83%	15841	22045	42%	58%
Jackson	9399	6476	59%	41%	10225	5650	64%	36%
Jefferson	19330	6149	76%	24%	15398	10081	60%	40%
Kanawha	15156	83909	15%	85%	19141	79924	19%	81%
Lewis	8169	12319	40%	60%	14370	6118	70%	30%
Lincoln	5616	6038	48%	52%	10178	1476	87%	13%
Logan	4608	20372	18%	82%	20284	4696	81%	19%
Marion	6526	31227	17%	83%	15073	22680	40%	60%
Marshall	4620	3938	54%	46%	4195	4363	49%	51%
Mason	2542	4927	34%	66%	5146	2323	69%	31%
McDowell	7017	13764	34%	66%	17044	3737	82%	18%
Mercer	7218	26625	21%	79%	15054	18789	44%	56%
Mineral	4672	2495	65%	35%	2931	4236	41%	59%
Mingo	3856	15374	20%	80%	13082	6148	68%	32%
Monongalia	5175	46231	10%	90%	14900	36506	29%	71%
Monroe	1848	1847	50%	50%	2764	931	75%	25%
Morgan	13901	2595	84%	16%	13543	2953	82%	18%
Nicholas	4967	12088	29%	71%	12569	4486	74%	26%
Ohio	4591	14586	24%	76%	5331	13846	28%	72%
Pendleton	4174	1762	70%	30%	5486	450	92%	8%
Pleasants	3519	2851	55%	45%	4754	1616	75%	25%
Pocahontas	6668	1653	80%	20%	6920	1401	83%	17%
Preston	3968	4663	46%	54%	6336	2295	73%	27%
Putnam	3939	12498	24%	76%	6612	9825	40%	60%
Raleigh	8605	13812	38%	62%	9711	12706	43%	57%
Randolph	11432	5497	68%	32%	10230	6699	60%	40%
Ritchie	9233	3189	74%	26%	9609	2813	77%	23%
Roane	9990	6601	60%	40%	14560	2031	88%	12%
Summers	10791	5943	64%	36%	14635	2099	87%	13%
Taylor	947	3176	23%	77%	2884	1239	70%	30%
Tucker	5991	2495	71%	29%	5881	2605	69%	31%
Tyler	2521	3454	42%	58%	3401	2574	57%	43%
Upshur	3603	10225	26%	74%	9095	4733	66%	34%
Wayne	10633	20670	34%	66%	21825	9478	70%	30%
Webster	2154	2312	48%	52%	2782	1684	62%	38%
Wetzel	5604	3950	59%	41%	4720	4834	49%	51%
Wirt	3492	3086	53%	47%	5380	1198	82%	18%
Wood	23471	19241	55%	45%	9183	33529	21%	79%
Wyoming	7588	12187	38%	62%	14997	4778	76%	24%

Served/Unserved Structures (by Congressional District)

Congressional District	Water				Sewer			
	Unserved	Served	% no	% yes	Unserved	Served	% no	% yes
1	117853	208981	36%	64%	141324	185510	43%	57%
2	143105	186057	43%	57%	179851	149311	55%	45%
3	105184	215704	33%	67%	204961	115927	64%	36%

Served/Unserved Structures (by Region)

	Water				Sewer			
Region	Unserved	Served	% no	% yes	Unserved	Served	% no	% yes
1	43067	74178	37%	63%	74205	43040	63%	37%
2	28628	87271	25%	75%	76281	39618	66%	34%
3	25743	111825	19%	81%	44701	92867	32%	68%
4	31781	43665	42%	58%	44811	30635	59%	41%
5	63260	45985	58%	42%	59324	49921	54%	46%
6	30435	118469	20%	80%	63430	85474	43%	57%
7	45842	44689	51%	49%	64975	25556	72%	28%
8	27594	13867	67%	33%	31177	10284	75%	25%
9	41146	26936	60%	40%	42214	25868	62%	38%
10	14815	22474	40%	60%	14246	23043	38%	62%
11	13831	21383	39%	61%	10772	24442	31%	69%

Served/Unserved Structures (by Senatorial Districts)

Senate District	Water				Sewer			
	Unserved	Served	% no	% yes	Unserved	Served	% no	% yes
1	19138	36674	34%	66%	16980	38832	30%	70%
2	37150	31326	54%	46%	45328	23148	66%	34%
3	34649	27946	55%	45%	26032	36563	42%	58%
4	20615	22509	48%	52%	26288	16836	61%	39%
5	3965	26896	13%	87%	8642	22219	28%	72%
6	20578	56568	27%	73%	48971	28175	63%	37%
7	17027	48157	26%	74%	53376	11808	82%	18%
8	5163	48863	10%	90%	12616	41410	23%	77%
9	16631	27695	38%	62%	26585	17741	60%	40%
10	30632	35398	46%	54%	39940	26090	60%	40%
11	35390	36474	49%	51%	50947	20917	71%	29%
12	30970	54740	36%	64%	54453	31257	64%	36%
13	5443	58487	9%	91%	14876	49054	23%	77%
14	21361	26619	45%	55%	33461	14519	70%	30%
15	35119	15283	70%	30%	39662	10740	79%	21%
16	21200	16823	56%	44%	17871	20152	47%	53%
17	11073	40276	22%	78%	10062	41287	20%	80%

Delegate District	Water				Sewer			
	Unserved	Served	% no	% yes	Unserved	Served	% no	% yes
1	6733	15170	31%	69%	4024	17879	18%	82%
2	7300	6514	53%	47%	7251	6563	52%	48%
3	3295	13741	19%	81%	3748	13288	22%	78%
4	5714	4482	56%	44%	5275	4921	52%	48%
5	5918	4265	58%	42%	5349	4834	53%	47%
6	10347	5184	67%	33%	12250	3281	79%	21%
7	12285	6039	67%	33%	13895	4429	76%	24%
8	4221	5204	45%	55%	3563	5862	38%	62%
9	4683	8221	36%	64%	8614	4290	67%	33%
10	18060	8902	67%	33%	2387	24575	9%	91%
11	10960	7667	59%	41%	16444	2183	88%	12%
12	6929	2915	70%	30%	6488	3356	66%	34%
13	3101	9923	24%	76%	7883	5141	61%	39%
14	2277	2676	46%	54%	3392	1561	68%	32%
15	623	3663	15%	85%	366	3920	9%	91%
16	1547	10930	12%	88%	3395	9082	27%	73%
17	326	9217	3%	97%	1965	7578	21%	79%
18	276	3759	7%	93%	1934	2101	48%	52%
19	10529	17978	37%	63%	21499	7008	75%	25%
20	1387	10194	12%	88%	8164	3417	70%	30%
21	8702	8017	52%	48%	13921	2798	83%	17%
22	8187	8997	48%	52%	13834	3350	81%	19%
23	966	7860	11%	89%	6201	2625	70%	30%
24	3854	19888	16%	84%	19816	3926	83%	17%
25	5363	10132	35%	65%	12769	2726	82%	18%
26	3989	12492	24%	76%	12146	4335	74%	26%
27	6024	25242	19%	81%	12927	18339	41%	59%
28	13308	9865	57%	43%	17350	5823	75%	25%
29	1612	4020	29%	71%	3442	2190	61%	39%
30	3518	1639	68%	32%	182	4975	4%	96%
31	925	5958	13%	87%	4036	2847	59%	41%
32	6476	21741	23%	77%	14027	14190	50%	50%
33	7617	6271	55%	45%	12738	1150	92%	8%
34	11706	6178	65%	35%	15292	2592	86%	14%
35	7159	26790	21%	79%	2547	31402	8%	92%
36	3853	23376	14%	86%	6329	20900	23%	77%
37	224	11181	2%	98%	10	11395	0%	100%
38	414	8259	5%	95%	1328	7345	15%	85%
39	1480	8553	15%	85%	4312	5721	43%	57%
40	2135	7839	21%	79%	5305	4669	53%	47%
41	3832	8400	31%	69%	9991	2241	82%	18%
42	14621	9145	62%	38%	13067	10699	55%	45%
43	17803	7060	72%	28%	16763	8100	67%	33%
44	4422	6879	39%	61%	7188	4113	64%	36%
45	2453	7983	24%	76%	6342	4094	61%	39%
46	8484	13383	39%	61%	15109	6758	69%	31%
47	5320	7480	42%	58%	9169	3631	72%	28%
48	6490	31712	17%	83%	16156	22046	42%	58%
49	1601	3889	29%	71%	4251	1239	77%	23%
50	6262	30728	17%	83%	14310	22680	39%	61%
51	4432	45430	9%	91%	13356	36506	27%	73%
52	1551	2987	34%	66%	3283	1255	72%	28%
53	6079	3913	61%	39%	7325	2667	73%	27%
54	6118	5030	55%	45%	8962	2186	80%	20%
55	5257	3672	59%	41%	7490	1439	84%	16%
56	3338	1478	69%	31%	1532	3284	32%	68%
57	7443	3386	69%	31%	7683	3146	71%	29%
58	13280	2795	83%	17%	13043	3032	81%	19%
59	7434	2097	78%	22%	8211	1320	86%	14%
60	2251	2300	49%	51%	3669	882	81%	19%
61	412	4414	9%	91%	417	4409	9%	91%
62	1727	3319	34%	66%	3979	1067	79%	21%
63	1084	2996	27%	73%	1251	2829	31%	69%
64	1059	3167	25%	75%	1749	2477	41%	59%
65	7548	1570	83%	17%	2769	6349	30%	70%
66	7166	712	91%	9%	6581	1297	84%	16%
67	4614	3867	54%	46%	6046	2435	71%	29%